

NITRIDE-BASED TRANSISTORS AND METHODS OF FABRICATION THEREOF USING NON-ETCHED CONTACT RECESSES

ABSTRACT OF THE DISCLOSURE

Contacts for a nitride based transistor and methods of fabricating such contacts provide a recess through a regrowth process. The contacts are formed in the recess. The regrowth process includes fabricating a first cap layer comprising a Group III-nitride semiconductor material. A mask is fabricated and patterned on the first cap layer. The pattern of the mask corresponds to the pattern of the recesses for the contacts. A second cap layer comprising a Group III-nitride semiconductor material is selectively fabricated (*e.g.* grown) on the first cap layer utilizing the patterned mask. Additional layers may also be formed on the second cap layer. The mask may be removed to provide recess(es) to the first cap layer, and contact(s) may be formed in the recess(es). Alternatively, the mask may comprise a conductive material upon which a contact may be formed, and may not require removal.